

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (Currently amended) An electrorheological device comprising an electrorheological fluid and electrode configuration having electrodes that are in motion relative to said electrorheological fluid and arranged such that an electric field is generated having a significant component parallel to the direction of an anticipated external stress field.

2. (Original) A device as claimed in claim 1 wherein said electrode configuration comprises a plurality of positive and negative electrodes formed on an insulating substrate, said electrodes being disposed on said substrate so as to provide a series of equidistantly spaced alternately positive and negative electrodes in the said direction.

3. (Currently amended) An electrorheological clutch comprising, a cylindrical drive member, a cylindrical driven member and an electrorheological fluid disposed between said drive member and said driven member, wherein said clutch further comprises an electrode configuration for generating an electric field, said electrode configuration being such as to generate a significant component of said electric field perpendicular to an axis of rotation of said drive and driven members, and parallel to the surfaces of the drive and driven members.

4. (Original) A clutch as claimed in claim 3 comprising a cylindrical rotor provided within a cylindrical housing, said rotor being adapted to rotate about said axis of rotation, and said electrode configuration comprising a plurality of strip electrodes parallel to said axis of rotation and spaced equidistantly about said axis of rotation such that positive and negative electrodes alternate about said axis.

5. (Original) A clutch as claimed in claim 4 wherein the spacing between the rotor and the cylindrical housing is of the same order as the spacing between the strip electrodes.

6. (Original) A clutch as claimed in claim 4 wherein said cylindrical rotor is provided at opposite ends with first and second electrodes, and wherein said strip electrodes extend from said first and second electrodes on the outer surface of said cylindrical rotor toward the other of said first and second electrodes.

7. (Original) A clutch as claimed in claim 6 wherein strip electrodes parallel to the axis of rotation are additionally provided on the inner surface of the cylindrical housing.

8. (Original) A clutch as claimed in claim 6 wherein the strip electrodes extending from the first electrode toward the second electrode, and the strip electrodes extending from the second electrode toward the first electrode are of equal length and are equally spaced from each other.

9-14. (Canceled)

15. (New) The clutch of claim 6, wherein said electrodes are cup-shaped.

16. (New) An electrorheological clutch comprising;

a cylindrical drive member;

a cylindrical driven member and an electrorheological fluid disposed between said drive member and said driven member;

an electrode configuration for generating an electric field, said electrode configuration being such as to generate a significant component of said electric field perpendicular to an axis of rotation of said drive and driven members, and parallel to the surfaces of the drive and driven members; and

a cylindrical rotor provided within a cylindrical housing, said rotor being adapted to rotate about said axis of rotation, and said electrode configuration comprising a plurality of strip electrodes parallel to said axis of rotation and spaced equidistantly about said axis of rotation such that positive and negative electrodes alternate about said axis,

wherein said cylindrical rotor is provided at opposite ends with first and second electrodes, and wherein said strip electrodes extend from said first and second electrodes on the outer surface of said cylindrical rotor toward the other of said first and second electrodes, and wherein strip electrodes parallel to the axis of rotation are additionally provided on the inner surface of the cylindrical housing.